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## Original Article

### Assessment of various complications in patients undergoing third molar extractions

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#### ABSTRACT

**Background:** The extraction of the impacted third molar is a common oral surgical procedure; and it is often attended by complications, which are distressing to patients. Pain, trismus and swelling are common complications reported, and they are thought to arise from inflammatory response which is a direct and immediate consequence of the surgical procedure. Hence; we planned the present study to assess various complications in patients undergoing third molar extractions. **Materials & methods:** The present investigation included assessment of various postoperative complications in patients undergoing third molar extractions. A total of 300 patients were included in the present study. Complete hematological investigations were carried out in all the patients. Detailed clinical and medical history of all the patients was also obtained. Local anesthesia was administered and all the extraction procedures were carried out under the hands of skilled oral surgeons. Patients were followed up for recording the postoperative complications. **Results:** Most commonly observed postoperative complications in the present study were pain and swelling. Other complications seen were trismus, dry socket and paresthesia. **Conclusion:** Occurrence of postoperative pain and swelling are the most common complications in patients undergoing third molar extractions.

**Key words:** Complication, Extraction, Molar

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## INTRODUCTION

The extraction of the impacted third molar is a common oral surgical procedure; and it is often attended by complications, which are distressing to patients. Pain, trismus and swelling are common complications reported, and they are thought to arise from inflammatory response which is a direct and immediate consequence of the surgical procedure.<sup>1-3</sup> The adverse effects of the third molar surgery on the quality of life have been reported to show a three-fold increase in patients who experience pain, swelling and trismus alone or in combination, compared to those who were asymptomatic.<sup>4, 5</sup> The accident or complication rates related to third molar extraction may vary between 2.6 and 30.9 %, being the results influenced by different factors, such as age and health condition of the patient, gender, tooth impact level, surgeon's experience, smoking, intake of contraceptive medicine, quality of oral hygiene, and surgical technique among others.<sup>6, 7</sup> The overall incidence of complication and the severity of these complications are associated most directly with the depth of impaction and with the age of the patient.<sup>8, 9</sup> Hence; we planned the present study to assess various complications in patients undergoing third molar extractions.

## MATERIALS & METHODS

The present investigation was commenced in the department of oral surgery of the Nalanda Medical College & Hospital, Patna, Bihar and it included assessment of various postoperative complications in patients undergoing third molar extractions. Written consent was obtained from all the patients after explaining in detail the entire research protocol. All the patients reporting to the department of oral surgery in the time period of two years for the removal of third molar were included in the present study. Inclusion criteria for the present study included:

- Patients between the age group of 16 to 50 years,
- Patients with negative history of any other systemic illness,
- Patients with absence of any known drug allergy,
- Patients with any absence of any other metabolic and bleeding disorder

After meeting the inclusion criteria, a total of 300 patients were included in the present study. Complete hematological investigations were carried out in all the patients. Detailed clinical and medical history of all the patients was also obtained. Local anesthesia was administered and all the extraction procedures were

carried out under the hands of skilled oral surgeons. Patients were followed up for recording the postoperative complications. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software.

**RESULTS**

A total of 300 patients scheduled to undergo third molar extraction were included in the present study. Among these 300 patients, 170 were males while the remaining 130 were females. 30 percent of the patients were of less than 30 years of age. 40 percent of the patients were between the age group of 20 to 30 years and the remaining 30 percent of the patients were more than 30 years of age. Most commonly observed postoperative complications in the present study were pain and swelling. Other complications seen were trismus, dry socket and paresthesia.

**Table 1: Age-wise and gender-wise distribution of patients**

Age group (years)	Gender			
	Males		Females	
	No. of patients	Percentage of patients	No. of patients	Percentage of patients
Less than 20	50	16.7	40	13.3
20 to 30	70	23.3	50	16.7
More than 30	50	16.7	40	13.3
<b>Total</b>	<b>170</b>	<b>56.7</b>	<b>130</b>	<b>43.3</b>

**DISCUSSION**

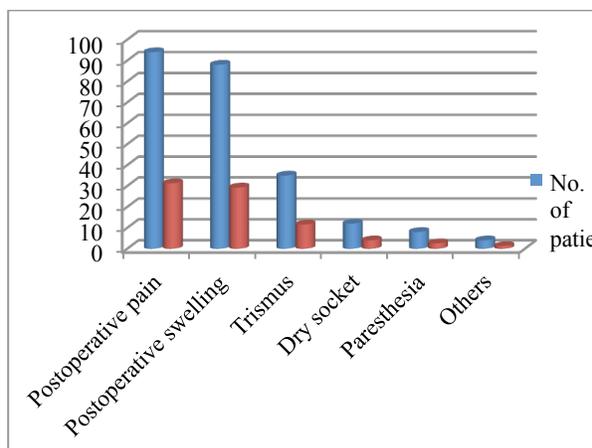
In the present study, a total of 300 patients scheduled to undergo third molar extraction were included in the present study. Among these 300 patients, 170 were males while the remaining 130 were females. 30 percent of the patients were of less than 30 years of age. Osunde OD et al reviewed the different modalities of minimizing inflammatory complications in third molar surgery. A medline literature search was performed to identify articles on management of inflammatory complications in third molar surgery. Standard textbooks of Oral and Maxillofacial Surgery were also consulted and some local scientific publications on the subject were reviewed. Methods range from surgical closure techniques, use of drains, physical therapy and pharmacological means. Studies reviewed have shown that no single modality effectively minimizes postoperative pain, swelling and trismus without undesirable effects. Inflammatory complications after third molar surgery still remains an important factor in quality of life of patients at the early postoperative periods.<sup>10</sup> In the present study, 40 percent of the patients were between the age group of 20 to 30 years and the remaining 30 percent of the patients were more than 30 years of age. Chukwunke F et al reviewed the different methods of minimizing postoperative morbidity following lower third molarsurgery. Relevant literatures from Scirus, Pubmed and

Medline computerized search on management of postoperative morbidity following third molar surgery were evaluated and highlighted.

**Table 2: Incidence of occurrence of various post-operative complications in patients undergoing third molar extraction**

Postoperative complication	No. of patients	Percentage of patients
Postoperative pain	94	31.3
Postoperative swelling	88	29.3
Trismus	35	11.6
Dry socket	12	4
Paresthesia	8	2.6
Others	4	1.3

**Graph 2: Incidence of occurrence of various post-operative complications in patients undergoing third molar extraction**



Information was also obtained from texts and journals in the medical libraries of Federal School of Dental Technology and the University of Nigeria both in Enugu. Studies reviewed have not pointed to the effectiveness of the routine use of any systemic or local agent for minimizing postoperative morbidity after third molar surgery without other undesirable effects. Oral surgeons across the world have devised several methods, which include the use of drugs, different surgical techniques, laser therapy and the use of drains. Postoperative morbidity after the surgical removal of impacted lower third molar still remains an important factor in patients' recovery and comfort. The awareness of different methods of reducing morbidity after lower third molar surgery would help both the surgeon and the patients in the management of impacted lower third molar.<sup>11</sup> In the present study, Most commonly observed postoperative complications were pain and swelling. Other complications seen were trismus, dry socket and paresthesia. Osunde OD et al compared the effect of single and multiple suture techniques on postoperative complications. All consecutive patients 18 years of

age or older were randomized into 2 groups. All selected participants underwent surgical extraction of their impacted teeth by the same surgeon under local anesthesia. The flaps in 1 group were closed by multiple sutures and those in the second group were closed by a single suture. Pain, swelling, and trismus were evaluated at postoperative days 1, 2, 3, 5, and 7. A total of 50 subjects participated in the present study. Both groups were comparable in terms of the age distribution, difficulty index, duration of surgery, and baseline parameters such as facial width, mouth opening, and preoperative pain, which was 0 in both groups. Other comparable variables included impaction type ( $P = .210$ ) and indication for surgery ( $P = .278$ ). A statistically significant difference was found in the level of pain at postoperative days 1, 2, and 3 ( $P < .05$ ). A similar significant difference was found in swelling and trismus ( $P < .05$ ). At days 5 and 7, no significant differences were found between the 2 groups for all parameters of pain, swelling, and trismus ( $P > .05$ ). Their study had a comparable distribution of age, gender, and operative variables, such as the pattern of impaction, preoperative difficulty index, and operative time between patients undergoing the 2 methods of closure.<sup>12</sup>

## CONCLUSION

Under the light of above obtained data, the authors conclude that occurrence of postoperative pain and swelling are the most common complications in patients undergoing third molar extractions.

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